

CLAIMS

WHAT IS CLAIMED IS:

Sub A1
5 1. A genetically engineered mammalian cell that has been mutated by a process comprising the insertion of a recombinantly manipulated polynucleotide sequence into a gene in said genetically engineered mammalian cell wherein said gene is identifiable as corresponding to at least one of SEQ ID NOS: 1-574.

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2. The genetically engineered mammalian cell of Claim 1, wherein said cell is murine.

Sub B1
15 3. A cell according to Claim 2, wherein said cell is an embryonic stem cell.

4. The genetically engineered mammalian cell of Claim 1, wherein said polynucleotide sequence is present on a viral vector.

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5. A cell according to Claim 4, wherein said viral vector is a retroviral vector.

6. A cell according to Claim 4, wherein said viral vector additionally comprises regions of targeting DNA that facilitate gene targeting by homologous recombination.

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Sub A2
30 7. An isolated murine embryonic stem cell line comprising an engineered retroviral gene trap vector in at least one gene comprising a polynucleotide sequence first disclosed in one of SEQ ID NOS: 1-574.